REMARKS

Claims 1 and 4-17 are pending in this application, with claims 7-9, 11 and 12 being withdrawn from consideration. By this Amendment, claims 1, 6 and 10 are amended and claims 13-17 are added. Claims 13-17 read on the elected species as all relate to features of the rate of pressure drop. Claims 2 and 3 are canceled without prejudice to or disclaimer of the subject matter recited therein. No new matter is added. Reconsideration of the application in light of the amendments and the following remarks is respectfully requested.

Applicant acknowledges that claim 4 does not stand rejected based on any grounds and is thus believed to contain allowable subject matter.

In the Office Action, claim 6 is rejected under 35 U.S.C. §112, second paragraph for minor informalities. This rejection is respectfully traversed.

In making the §112 rejection, the Office Action alleges that it is unclear what "longer" refers to in claim 6. For further clarity, claim 6 is revised to recite that "the discharge amount control mechanism sets an open time of a purge valve for discharging fuel off-gas to outside ~~longer~~, and wherein the open time is increased in proportion to an increase in the nitrogen concentration of the fuel gas in the fuel cell." This is supported, for example, by Applicant's paragraph [0051].

Claim 6 is concise and definite. Withdrawal of the rejection is respectfully requested.

In the Office Action, claims 1-3, 5, 6 and 10 are rejected under 35 U.S.C. §102(a) over French Patent No. FR 2,831,994 (FR 994). This rejection is respectfully traversed.

Independent claim 1 is amended to incorporate features from canceled claims 2 and 3. In particular, claim 1 now specifies that nitrogen concentration is estimated from "a rate of pressure drop in the fuel off-gas passage during discharge." Independent method claim 10 is also revised to recite "determining a rate of pressure drop in the fuel off-gas passage during

discharge" and that nitrogen concentration is estimated "based on the determined rate of pressure drop." These features are not taught by FR 994 as discussed below.

In making the §102 rejection, the Office Action alleges that FR 994 teaches a fuel off-gas passage 10, a discharge mechanism (circuit 12) that discharges fuel off-gas, a nitrogen concentration estimation mechanism (page 2, line 16-page 3, line 11) and a discharge amount control mechanism (page 3 lines 7-11), wherein the nitrogen is estimated from a rate of pressure drop (page 2, line 32-page 3, line 6). Applicant respectfully disagrees.

Although FR 994 may control discharge, it achieves this through a discharger 26 having an elastic type valve that opens automatically based on a pressure difference between an upstream pressure and a reference pressure of the discharger (page 9, lines 1-5 and page 12, lines 3-8). FR 994 thus discharges without detecting pressure by a pressure sensor. However, with the subject matter of clarified independent claims 1 and 10, nitrogen concentration can be estimated from a "rate of pressure drop" in the fuel off-gas passage during discharge. This can be achieved through detection of pressure with a single pressure sensor as described in Applicant's paragraphs [0041] - [0045]. Thus, by assessing the "rate" of pressure drop over time, this rate (relatively low or high) can form an estimation of nitrogen concentration.

Because FR 994 fails to teach each and every feature of independent claims 1 and 10, these claims and claims dependent therefrom distinguish over FR 994.

New claims 13-17 also distinguish over FR 994 for their dependence on allowable based claims, as well as for the additional features each recites. In particular, dependent claim 13 specifies that the fuel cell system further includes a pressure sensor that detects the rate of pressure drop in the fuel off-gas passage. This is supported, for example, by Applicant's Fig. 1 and paragraphs [0041] - [0045]. FR 994 does not disclose a pressure sensor that detects a rate of pressure drop. Dependent claims 14 and 16 specify that the

nitrogen concentration estimation is high when the rate of pressure drop is relatively slow. This is supported, for example, by Applicant's Fig. 3 and paragraph [0048]. FR 994 also fails to disclose this feature. Dependent claim 15 specifies that a single pressure sensor detects the rate of pressure drop. This is supported, for example, by Applicant's Fig. 1 and paragraphs [0041] - [0045]. As discussed above, FR 994 fails to disclose a pressure sensor as claimed. Dependent claim 17 specifies that the detection of the rate of pressure drop is provided by a single pressure sensor. This is supported, for example, by Applicant's Fig. 1 and paragraphs [0041] - [0045]. Again, FR 994 fails to disclose a pressure sensor as claimed.

Withdrawal of the rejection is respectfully requested.

Because independent claim 1 is allowable for reasons discussed above, Applicant respectfully requests rejoinder of withdrawn claims 7-9, 11 and 12, which depend from or otherwise include all of the features of allowable independent claim 1.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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